

U.S. Patent Application Serial No. 10/796,488

Reply to Office Action of June 25, 2007

### REMARKS

Applicants have received and reviewed an Office Action dated June 25, 2007. By way of response, Applicants have amended claims 1-16 and added claims 17-18. The amendments to claims 1-16 are supported in the specification at least at page 9, line 4 to page 11, line 24; and Figures 4A-4D. New claim 17 is supported by the specification at least at page 9, lines 9-11 and page 11, lines 11-12. New claim 18 is supported in the specification at least at page 11, lines 26-28; and Figure 5. No new matter is presented. Claims 1-18 are pending. Applicants submit that the pending claims are supported by the specification.

For the reasons given below, Applicants submit that the amended and newly presented claims are in condition for allowance and notification to that effect is earnestly solicited.

### 35 U.S.C. § 102(b)

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

#### 1. McGrath, U.S. Patent No. 5,192,503

Claims 1, 2, 5, 9, 12 and 14 were rejected under 35 U.S.C. § 102(b) as anticipated by McGrath, U.S. Patent No. 5,192,503. Applicants respectfully traverse the rejection.

The Examiner asserts that element 22 of Figure 1 is a gasket, and element 24 is a spacer. However, McGrath discloses two sealing members, 22 and 24 of Figure 1. McGrath states at column 6, lines 21-26:

"In this embodiment [of Figure 1], divider means in the form of a second seal number 24 is mounted on the raised surface 14 interiorly of the first seal member 22 as shown in FIG. 1. The second seal member 24 is formed 25 of the same material and has the same height as the first seal member 22."

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Elements 22 and 24 cannot serve the functions of spacer and gasket. The spacer is substantially not compressed in the claimed invention, whereas a gasket is sealingly compressed. The role of a spacer is to limit compression of the gasket in the claimed invention; thus, these elements must be made of different materials. However, elements 22 and 24 are made from the same material. The array hybridization apparatus of the claimed invention is not disclosed by McGrath; the method of disassembling the array hybridization of the claimed apparatus cannot be the same as the method of disassembling taught by McGrath, as a noncompressible or less compressible pivot point is not disclosed that is capable of providing the cantilever effect that is the key to Applicants' invention. McGrath does not achieve the disassembly function of the spacer portion claimed by Applicants. McGrath does not expressly or inherently describe the claimed invention. Accordingly, Applicants submit that the current invention is not anticipated, and withdrawal of the rejection is respectfully requested.

2. Halverson, U.S. Patent No. 6,913,931

Claims 1, 2, 5, 6, 9 and 14 were rejected under 35 U.S.C. § 102(e) as anticipated by Halverson, U.S. Patent No. 6,913,931. Applicants respectfully traverse the rejection.

The Examiner asserts that Halverson discloses gasket element 480 and spacer element 490 of Figure 11. However, Halverson discloses two gasket members, not gasket and spacer members. As is disclosed at column 12, lines 40-42 and lines 56-58,

"In the depicted embodiment, gaskets are also provided on the carrier 470 to, for example, provide protection to the microarray devices 410 located on carrier 470...

"Another optional feature depicted in connection with carrier 470 is the inner gasket 490..."

An outer and inner gasket such as is disclosed by Halverson would not operate to disassemble the microarray as is claimed in the current invention. The fact that both elements are gaskets means that both are relatively compressible and similar in properties. Thus, applying pressure to one gasket element will only result in compressing both gasket elements similarly. The array hybridization apparatus of the claimed invention is not disclosed by Halverson; the

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method of disassembling the array hybridization of the claimed apparatus cannot be the same as the method of disassembling taught by Halverson. Halverson does not expressly or inherently describe the claimed invention. Accordingly, Applicants submit that the current invention is not anticipated, and withdrawal of the rejection is respectfully requested.

3. Lyman, U.S. Patent No. 6,555,361

Claims 1-3, 8, 11 and 14 were rejected under 35 U.S.C. § 102(e) as anticipated by Lyman, U.S. Patent No. 6,555,361. Applicants respectfully traverse the rejection.

The Examiner asserts that Lyman discloses two raised rings 26, 28 of Figure 2 that are spacers, and a gasket that fits into groove 30 as depicted in Figure 3. Applicants submit that such an arrangement of gaskets and spacers would not permit either separation of the slide and substrate or any disassembling such as is claimed for the array hybridization of the invention. Applying a sufficient force 150, 150' as is applied in the claimed invention would not provide a cantilever effect tending to separate the apparatus disclosed by Lyman. Because the spacers and gasket of Lyman surround the entire apparatus at its edge, applying a force 150, 150' would only result in application of pressure to a portion of the apparatus. Applicants' cantilever effect is realized by virtue of the positions of the spacer and gasket; such positioning is not disclosed by Lyman. The method of disassembling the array hybridization of the claimed apparatus cannot be the same as the method of disassembling taught by Lyman, as applying a force 150, 150' would only result in application of pressure to a portion of the apparatus.

Lyman does not expressly or inherently describe the claimed invention. Accordingly, Applicants submit that the current invention is not anticipated, and withdrawal of the rejection is respectfully requested.

4. McGarry, U.S. Patent No. 6,642,046

Claims 1-3, 8, 11 and 14 were rejected under 35 U.S.C. § 102(e) as anticipated by McGarry, U.S. Patent No. 6,642,046. Applicants respectfully traverse the rejection.

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The Examiner asserts that McGarry discloses a slide, a substrate, a deformable gasket, and a substantially non-deformable spacer. However, the layout of the multiple gaskets 48 and spacer wall 32, shown in Figures 1, 4, and 5, would not permit disassembling such as is claimed for the array hybridization of the invention. The spacer, in particular, surrounds the entire apparatus at its edge. Applying a sufficient force 150, 150' to the apparatus of McGarry would not provide a cantilever effect tending to separate the apparatus. Rather, application of a force 150, 150' would only result in increased pressure to a portion of the apparatus. Applicants' cantilever effect is realized by virtue of the positions of the spacer and gasket; no such positioning is disclosed by McGarry. Further, the method of disassembling the array hybridization of the claimed apparatus cannot be the same as the method of disassembling taught by McGarry, as applying a force 150, 150' would only result in application of pressure to a portion of the apparatus.

McGarry does not expressly or inherently describe the claimed invention. Accordingly, Applicants submit that the current invention is not anticipated, and withdrawal of the rejection is respectfully requested.

**35 U.S.C. § 103(a)**

In order to meet its burden in establishing a rejection under 35 U.S.C. § 103 the Office must first demonstrate that the combined prior art references teach or suggest all the claimed limitations. See *Pharmastem Therapeutics v. Viacell et al.*, 2007 U.S. App. LEXIS 16245 (Fed. Cir. 2007) ("the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make [every element of] the composition or device, or carry out the [entire] claimed process, and would have had a reasonable expectation of success in doing so," (citing *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007))); and see *Omegaflex, Inc. v. Parker-Hannifin Corp.*, 2007 U.S. App. LEXIS 14308 (Fed. Cir. 2007) ("[t]he Supreme Court recently explained that 'a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art,'" (citing *KSR Int'l Co.* at 1741)); and see *Dystar*

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*Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006) ("[once] all claim limitations are found in a number of prior art references, the factfinder must determine '[w]hat the prior art teaches, whether it teaches away from the claimed invention, and whether it motivates a combination of teachings from different references,'" (citing *In re Fulton*, 391 F.3d 1195, 1199-1200 (Fed. Cir. 2004))).

1. Halverson or McGrath in view of Merchant, U.S. Patent No. 6,090,687

Claims 4, 7 and 10 were rejected under 35 U.S.C. § 103(a) as obvious over either Halverson, U.S. Patent No. 6,913,931 or McGrath, U.S. Patent No. 5,192,503 each as applied to claim 1, and further in view of Merchant, U.S. Patent No. 6,090,687. Applicants respectfully traverse the rejection.

As is discussed above, neither Halverson nor McGrath teach Applicants' invention. The disclosure of Merchant does not remedy the deficiencies of the other two cited references. McGrath discloses an apparatus having two compressible gaskets that are made from the same material. No element is disclosed that is capable of providing a cantilever effect, leading to separation or disassembly, which is the role carried out by the spacer in the claimed invention. In order to provide a cantilever effect when a force 150, 150' is provided, a spacer must not be compressed by the force. McGrath discloses only compressible gaskets.

Similarly, Halverson discloses two gasket members, not gasket and spacer members. The shortcomings of Halverson are the same as for McGrath. Neither reference supplies the elements of the claimed invention and neither reference enables a method of disassembling an apparatus that resembles the method of the claimed invention.

Merchant discloses a method of fabricating an integrated circuit, more specifically a means of bonding and sealing wafers into a structure capable of holding a vacuum (column 1, lines 23-27). There is no disclosure in Merchant of disassembling the structure – indeed, it is highly desirable to maintain the disclosed constructions intact and maintain the vacuum within. Thus, Merchant teaches away from anything resembling a structure or method to disassemble two substrates.

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As set forth in MPEP § 2143.01, if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). The combination of either McGrath or Halverson with Merchant would result in a device having gaskets that is permanently sealed under vacuum and is specifically designed not to be disassembled. In sharp contrast, Applicants claim elements specifically intended to facilitate disassembly of the device, and a method of disassembly. The combination of references would result in a device not suitable for Applicants' intended purpose of disassembly.

Furthermore, as set forth in MPEP § 2143.01, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). The modification of either McGrath or Halverson with Merchant would change the principle of operation of the former two references, as neither McGrath nor Halverson teach a device that is intended for permanent sealing under vacuum. Thus, the combined references do not render the claimed invention *prima facie* obvious.

Additionally, neither McGrath nor Halverson is properly combined with Merchant. Merchant teaches a method of fabricating an integrated circuit; as such it is nonanalogous art. One of skill in the art of making array hybridization apparatuses would not look to the art of integrated circuits to provide elements to include in an array hybridization apparatus.

Accordingly, based on the foregoing differences, Applicants respectfully submit that the cited references do not render the presently claimed invention obvious, and withdrawal of this rejection is respectfully requested.

2. Halverson or McGrath in view of Teshima, U.S. Patent No. 6,083,759

Claim 15 was rejected under 35 U.S.C. § 103(a) as obvious over either Halverson, U.S. Patent No. 6,913,931 or McGrath, U.S. Patent No. 5,192,503 each as applied to claim 1, and

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further in view of Teshima, U.S. Patent No. 6,083,759. Applicants respectfully traverse the rejection.

The teachings of Halverson and McGrath are discussed above.

Teshima teaches a hinged apparatus for adjusting the angle at which two slides are held so as to facilitate the addition of blood samples to make blood smears (column 1, lines 28-33). The hinge is adjustable and can be set to various angles such that the selected angle of the hinge is securely held during use.

The living hinge of claim 15 is a hinge that facilitates disassembly of the array apparatus of the claimed invention. The angle of the hinge of the invention is "set" at 180° until the user applies a sufficient force 150, 150' to the slide, at which point the hinge operates to aid in separation and disassembly. The hinge is thus movable during use. The hinge is not secured during use or it would not operate as intended in the claimed invention.

The combination of either Halverson or McGrath with Teshima does not result in Applicants' invention. Neither Halverson nor McGrath encompass Applicants' invention or render Applicants' invention obvious, as is argued above. Teshima does not remedy the failure of the other two references to teach or suggest the claimed invention. Further, Teshima does not disclose a hinge that resembles the hinge of claim 15. Thus, the combination of Teshima with either of the other two cited references would not result in an apparatus resembling that of the claimed invention. No motivation to provide a hinge as disclosed by Applicants can be found in the teaching of Teshima, because the hinge disclosed is fundamentally different in nature and in performance compared to Applicants' hinge.

Additionally, the proposed modification would render the invention being modified unsatisfactory for its intended purpose. The combination of either McGrath or Halverson with Teshima would result in a device having gaskets and a hinge that is secured at a selected angle during use. In sharp contrast, Applicants claim a hinge specifically intended to move during use. This movement is necessary in order to facilitate disassembly of the device. The combination of references would not result in a device suitable for Applicants' intended purpose of disassembly. Thus there is no suggestion or motivation to make the proposed modification.

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Additionally, neither McGrath nor Halverson is properly combined with Teshima. Teshima teaches an apparatus to hold slides and further teaches a method of making blood smears. One of skill in the art of making array hybridization apparatuses would not look to the art of apparatuses to hold slides for receiving blood samples or methods of making blood smears to provide elements to include in an array hybridization apparatus.

Accordingly, based on the foregoing differences, Applicants respectfully submit that the cited references do not render the presently claimed invention obvious, and withdrawal of this rejection is respectfully requested.

3. Haverson or McGrath in view of Stapleton, U.S. Patent No. 5,436,129

Claim 16 was rejected under 35 U.S.C. § 103(a) as obvious over either Halverson, U.S. Patent No. 6,913,931 or McGrath, U.S. Patent No. 5,192,503 each as applied to claim 1, and further in view of Stapleton, U.S. Patent No. 5,436,129. Applicants respectfully traverse the rejection.

The teachings of Halverson and McGrath are discussed above.

Stapleton teaches a nucleic acid identification device having a reaction chamber equipped with a hinge and lever disposed to open the apparatus (column 11, lines 32-35).

The combination of either Halverson or McGrath with Stapleton does not result in Applicants' invention. Neither Halverson nor McGrath encompass Applicants' invention or render Applicants' invention obvious, as is argued above. Stapleton does not remedy the failure of the other two references to teach or suggest the invention of claim 1. The combination of Stapleton with either of the other two cited references would not result in an apparatus resembling that of the claimed invention.

The addition of Stapleton does not provide motivation to make an array apparatus having a gasket and spacer situated such that when a force 150, 150' is applied to the substrate backing and the slide, a portion of the slide separates from the substrate backing. Both Halverson and McGrath disclose only apparatuses having two compressible gaskets. No element capable of providing a cantilever effect, which is the role carried out by the spacer in the claimed invention, is disclosed. This missing element is not taught or suggested by Stapleton; nor does the teaching



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of Stapleton provide any motivation to provide such a spacer. In order to provide a cantilever effect when a force 150, 150' is provided, a spacer must be supplied; the spacer must be situated away from the edge of the substrate or the slide and must not be compressed by the applied force.

Accordingly, based on the foregoing differences, Applicants respectfully submit that the cited references do not render the presently claimed invention obvious, and withdrawal of this rejection is respectfully requested.

**Double Patenting**

Claims 1-14 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 10/797,764. Applicants note that the double patenting rejection is provisional and decline to address the rejection at this time. At the time that claims of either the current application or Application No. 10/797,764 are found allowable, Applicants will address this rejection.

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**Summary**

In view of the above amendments and remarks, Applicant respectfully requests a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.



Respectfully submitted,

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Date: September 24, 2007

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